

Customer No. 26308

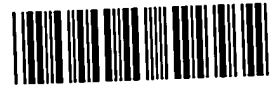
3762  
PATENT 61

Docket No. 9261.16761-DIV

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Aboul-Hosn  
Serial No: 09/669,104  
Filed: 25 September 2000  
For: Single Port Cardiac Support Apparatus

Group Art Unit: 3762  
Examiner: J. Machuga



26308

PATENT TRADEMARK OFFICE

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

RECEIVED  
AUG 17 2004  
TECHNOLOGY CENTER 3700

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT BEFORE MAILING DATE  
OF EITHER A FINAL ACTION OR NOTICE OF ALLOWANCE (37 CFR 1.97(c))

- NOTE: "An information disclosure statement shall be considered by the Office if filed ... before the mailing date of either (1) a final action under S 1.113 or (2) a notice of allowance under S 1.311, whichever occurs first, provided the statement is accompanied by either a certification as specified in paragraph (e) of this section or the fee set forth in S 1.17(p)." 37 CFR 1.97(c).
- NOTE: "If a final action or notice of allowance is mailed in an application and later withdrawn, the application will be considered as not having had a final action or notice of allowance mailed for purposes of considering an information disclosure statement." Notice of April 20, 1992 (1138 O.G. 37-41, 39).
- NOTE: "If information submitted during the period set forth in 37 CFR 1.97(c) with a certification is used in a new ground of rejection on unamended claims, the next Office action will not be made final since in this situation it is clear that applicant has submitted the information to the office promptly after it has become known and the information is being submitted prior to a final determination on patentability by the Office. However, the information submitted with a certification can be used in a new ground of rejection and the next Office action made final, [i]f the new ground of rejection was necessitated by amendment of the application by applicant. Where the information is submitted during this period with a fee, the examiner may use the information submitted, e.g., printed publication or evidence of public use, and make the next Office action final whether or not the claims have been amended, provided that no other new ground of rejection which was not necessitated by amendment to the claims is introduced by the examiner. See MPEP 706.07(a). If a new ground of rejection is introduced that is neither necessitated by an amendment to the claims nor based on the information submitted with the fee set forth in 37 CFR 1.17(p), the Office action shall not be made final." Notice of April 20, 1992 (1138 O.G. 37-41, 39).
- WARNING: "A PETITION FOR SUSPENSION OF ACTION TO ALLOW APPLICANT TIME TO SUBMIT AN INFORMATION DISCLOSURE STATEMENT WILL BE DENIED AS FAILING TO PRESENT GOOD AND SUFFICIENT REASONS, SINCE 37 CFR 1.97 PROVIDES ADEQUATE RECOURSE FOR THE TIMELY SUBMISSION OF PRIOR ART FOR CONSIDERATION BY THE EXAMINER." NOTICE OF JULY 6, 1992 (1141 O.G. 63).

TIME OF TRANSMITTAL OF ACCOMPANYING INFORMATION  
DISCLOSURE STATEMENT

- The information disclosure statement transmitted herewith is being filed AFTER THREE MONTHS OF THE FILING DATE OF THIS NATIONAL APPLICATION OR THE DATE OF ENTRY OF THE NATIONAL STAGE AS SET FORTH IN S 1.491 IN AN INTERNATIONAL APPLICATION OR AFTER THE MAILING DATE OF THE FIRST OFFICE ACTION ON THE MERITS, WHICHEVER EVENT OCCURRED LAST BUT BEFORE THE MAILING DATE OF EITHER:
  - a final action under § 1.113 or
  - a notice of allowance under § 1.311, whichever occurs first.

CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail, with sufficient postage, in an envelope addressed as follows: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450, on 9 August 2004

*Linda S. Wenzel*  
Signature of Person Signing

Linda S. Wenzel  
Type or Print Name of Person Signing

08/11/2004 GWORDF1 00000031 09669104

01 FC:1606

180.00 DP

## CERTIFICATION OR FEE

2. Accompanying this transmittal is  
(check either A or B below)
- A. ☐ a certification as specified in 37 CFR 1.97(e)  
OR
- B. ☒ the fee set forth in 37 CFR 1.17(p) for submission of an information disclosure statement under S 1.97(c). (\$180.00).

## FEE PAYMENT

(complete this item, if applicable)

3. Applicant elects the option to pay the fee set forth in 37 CFR 1.17(p) for submission of an information disclosure statement under S 1.97(c) (\$180.00).

Fee due \$ 180.00

## METHOD OF PAYMENT OF FEE

4. ☒ Attached is check in the amount of \$ 180.00
- ☐ Charge Account No.      in the amount of \$                       
A duplicate of this request is attached.

The submission of any document herewith is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* prior art reference against the claims of the present application.

**COPIES OF THE DOCUMENTS LISTED ON THE ATTACHED FORM PTO-1449 CAN BE FOUND IN THE FILE WRAPPER OF PARENT APPLICATION SERIAL NO. 08/891,456 FILED 11 JULY 1997, NOW U.S. PATENT NO. 6,123,725, FROM WHICH PRIORITY IS CLAIMED, AND ARE THEREFORE NOT INCLUDED WITH THIS SUBMISSION. COPIES OF THE DOCUMENTS WITH AN ASTERISK (\*) ARE ENCLOSED.**

If any additional fees are due, please charge Account No. 06-2360.

Reg. No. 50,295

Telephone No.: (262) 783 - 1300

Customer No. 26308

Patricia A. Limbach

Signature of Attorney

Patricia A. Limbach

Type or Print Name of Attorney of Record

**RYAN KROMHOLZ & MANION, S.C.**

**Post Office Box 26618**

**Milwaukee, Wisconsin 53226-0618**

Mailing Address of Sender

<b>LIST OF PRIOR ART CITED BY APPLICANT</b> <i>(Use several sheets if necessary)</i>	ATTY DOCKET NO. 9261.16761-DIV	SERIAL NO. 09/669,104
	APPLICANT Aboul-Hosn	
CUSTOMER NO. 26308	FILING DATE 25 September 2000	GROUP 3762



**RECEIVED**  
 AUG 17 2004  
 TECHNOLOGY CENTER 12700

### U.S. PATENT DOCUMENTS

Examiner Initial	DOCUMENT NUMBER	Date	Name	Class	Subclass	Date (if Appropriate)
	4,944,748 *	07/1990	Bramm et al.			
	4,955,856 *	9/1990	Phillips			
	5,040,944 *	08/1991	Cook			
	5,741,234 *	04/1998	Aboul-Hosn			
	6,083,260 *	07/2000	Aboul-Hosn			
	6,086,570 *	07/2000	Aboul-Hosn et al.			
	6,113,536 *	09/2000	Aboul-Hosn et al.			
	6,123,725 *	09/2000	Aboul-Hosn			
	6,152,704 *	11/2000	Aboul-Hosn et al.			
	6,210,133 *	04/2001	Aboul-Hosn et al.			
	6,210,397 *	04/2001	Aboul-Hosn et al.			

### FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	Class	Subclass	Translation Yes No
	1 222 355	Jun 87	Canada			
	1 240 802	Aug 88	Canada			
	1 302 829	Jun 92	Canada			
	1 308 319	Oct 92	Canada			
	1 323 467	Oct 93	Canada			

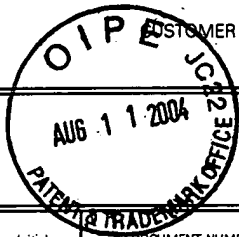
### OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

		Takami, Yoshiyuki, et al., "Effect of Surface Roughness on Hemolysis in a Centrifugal Blood Pump", ASAIO Journal; vol. 42 pp. M858-N862.
		Takami, Yoshiyuki, et al., "Effect of Surface Roughness on Hemolysis in a Pivot Bearing Supported Gyro Centrifugal Pump (C1E3)", Artificial Organs; vol. 20, No. 11, pp. 1156-1161, 1996
		Takami, Yoshiyuki, et al., "Material of the Double Pivot Bearing System in the Gyro C1E3 Centrifugal Pump", Artificial Organs, vol. 21, No. 2, pp. 143-147, 1997.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through and not considered. Include copy of this of with next communication to applicant.

<b>LIST OF PRIOR ART CITED BY APPLICANT</b> <i>(Use several sheets if necessary)</i>	<b>ATTY DOCKET NO.</b> 9261.16761-DIV	<b>SERIAL NO.</b> 09/669,104
	<b>APPLICANT</b> Aboul-Hosn	
	<b>FILING DATE</b> 25 September 2000	<b>GROUP</b> 3762



**RECEIVED**  
 AUG 17 2004  
 TECHNOLOGY CENTER 3700

### U.S. PATENT DOCUMENTS

Examiner Initial	DOCUMENT NUMBER	Date	Name	Class	Subclass	Filing Date (If Appropriate)
	6,228,063 *	05/2001	Aboul-Hosn			
	6,234,960 *	05/2001	Aboul-Hosn et al.			
	6,287,319 *	09/2001	Aboul-Hosn et al.			
	6,295,877 *	10/2001	Aboul-Hosn et al.			
	6,395,026 *	05/2002	Aboul-Hosn et al.			
	6,532,964 *	03/2003	Aboul-Hosn et al.			
	2003/0023201 *	01/2003	Aboul-Hosn et al.			
	2003/0205233 *	11/2003	Aboul-Hosn et al.			

### FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	Class	Subclass	Translation Yes No
	1 328 708	Apr 94	Canada			
	280 225	Aug 88	EPO			
	0157871 B1	Jul 90	EPO			
	0445782	Sep 91	EPO			
	0157859	Apr 92	EPO			

### OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

		Takano, Hisateru, et al., "Ventricular Assist Systems: Experience in Japan with Toyobo Pump and Zeon Pump", Annals of Thoracic Surgery, 1996; 61:317-22.
		Tsukiya, Tomonori, "Use of Motor Current in Flow Rate Measurement for the Magnetically Suspended Centrifugal Blood Pump", Artificial Organs, vol. 21, No. 5, pp. 396-401, 1997.
		Allaire, P.E., et al., "Prototype Continuous Flow Ventricular Assist Device Supported on Magnetic Bearings", Artificial Organs, vol., No. 6, pp. 582-590, 1996.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this of with next communication to applicant.

RECEIVED  
AUG 17 2004  
TECHNOLOGY CENTER 37000

## A circular stamp from the Office of Intellectual Property (OIP). The text "OIP" is at the top, "JC222" is at the top right, "AUG 11 2004" is in the center, and "PATENT &amp; TRADEMARK OFFICE" is at the bottom.

[illegible]

## FOREIGN PATENT DOCUMENTS

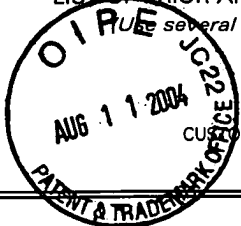
		DOCUMENT NUMBER	DATE	COUNTRY	Class	Subclass	Translation Yes No
		0396575	Mar 94	EPO			
		0397668	Mar 94	EPO			
		0611580	Aug 94	EPO			
		0478635	Dec 94	EPO			
		0629412	Dec 94	EPO			

**OTHER PRIOR ART** (*Including Author, Title, Date, Pertinent Pages, Etc.*)

		Anai, Hirofumi, et al., "Relationship Between Pump Speed Design and Hemolysis in an Axial Flow Blood Pump", Artificial Organs, vol. 20, No. 6, pp. 564-567, 1996.
		Andrade, Aron, et al., "Characteristics of a Blood Pump Combining the Centrifugal and Axial Pumping Principles: The Spiral Pump", Artificial Organs, vol. 20, No. 6, pp. 605-612, 1996.
		Burgreen, Greg W., et al., "A Design Improvement Strategy for Axial Blood Pumps Using Computational Fluid Dynamics", ASAIO Journal; 42:M354-M360, 1996.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this of with next communication to applicant.

LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)  CUSTOMER NO. 26308	ATTY DOCKET NO. 9261.16761-DIV	SERIAL NO. 09/669,104	RECEIVED AUG 17 2004 TECHNOLOGY CENTER 3700
	APPLICANT Aboul-Hosn		
	FILING DATE 25 September 2000	GROUP 3762	

### U.S. PATENT DOCUMENTS

Examiner Initial	DOCUMENT NUMBER	Date	Name	Class	Subclass	Filing Date (If Appropriate)

### FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	Class	Subclass	Translation Yes No
0397720	Mar 95	EPO			
0659443	Jun 95	EPO			
0591208	Nov 95	EPO			
0699447	Mar 96	EPO			
0611580	Dec 96	EPO			

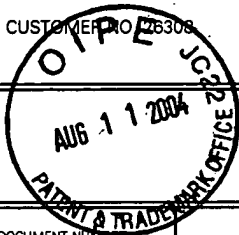
### OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

			Kaufmann, Ralf, et al., "The Implantable Fuzzy Controlled Helmholtz-Left Ventricular Assist Device: First in Vitro Testing", Artificial Organs, Vol. 21, No. 2, pp. 131-137, 1997
			Kawahito, K., et al., "Ex Vivo Evaluation of the NASA/DeBakey Axial Flow Ventricular Assist Device", ASAIO Journal; 42:M754-M757, 1996.
			Khanwilker, Pratap, et al., "Using Hybrid Magnetic Bearings to Completely Suspend the Impeller of a Ventricular Assist Device", Artificial Organs, vol. 20, No. 6, pp. 597-604, 1996.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this of with next communication to applicant.

LIST OF PRIOR ART CITED BY APPLICANT <i>(Use several sheets if necessary)</i>	ATTY DOCKET NO. 9261.16761-DIV	SERIAL NO. 09/669,104	RECEIVED AUG 17 2004 TECHNOLOGY CENTER 3700
	APPLICANT Aboul-Hosn		
	FILING DATE 25 September 2000	GROUP 3762	



### U.S. PATENT DOCUMENTS

Examiner Initial	DOCUMENT NUMBER	Date	Name	Class	Subclass	Filing Date (If Appropriate)

### FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	Class	Subclass	Translation Yes No
	0 768 091	Apr 97	EPO			
	2233 293	Jan 73	Germany			
	24 53 296	May 76	Germany			
	286 145	Jan 71	Russian Federation			
	545 358	Jul 77	Russian Federation			

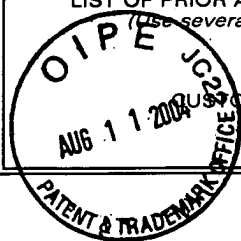
### OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

			McCarthy, Patrick M., et al., "Permanent Mechanical Circulatory Support With an Implantable Left Ventricular Assist Device", <i>Annals of Thoracic Surgery</i> , 63:1458-61, 1997.
			Nishimura, Kazunobu, et al., "Development of a Magnetically Suspended Centrifugal Pump as a Cardiac Assist Device for Long-Term Application", <i>ASAIO Journal</i> pp. 68-71, 1996.
			Kubo, Hironao, "Marine Propellers: The Latest Topics", <i>Artificial Organs</i> , vol. 21, No. 2, pp. 109-113, 1996.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this of with next communication to applicant.

LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)	ATTY DOCKET NO. 9261.16761-DIV	SERIAL NO. 09/669,104
	APPLICANT Aboul-Hosn	
	FILING DATE 25 September 2000	GROUP 3762



### U.S. PATENT DOCUMENTS

Examiner Initial	DOCUMENT NUMBER	Date	Name	Class	Subclass	Filing Date (If Appropriate)

### FOREIGN PATENT DOCUMENTS

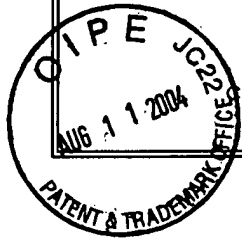
	DOCUMENT NUMBER	DATE	COUNTRY	Class	Subclass	Translation Yes No
	WO 85/01432	Apr 85	PCT			
	WO 85/01436	Apr 95	PCT			
	WO 88/07842	Oct 88	PCT			
	WO 89/04644	Jun 89	PCT			
	WO 89/04645	Jun 89	PCT			

### OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

			Nakazawa, Tadashi, et al., "The Development of Pivot Bearing Supported Sealless Centrifugal Pump for Ventricular Assist", Artificial Organs, vol. 20, No. 6, pp. 485-490, 1996
			Nakazawa, Tadashi, et al., "The Effect of the Impeller-Drive Magnetic Coupling Distance on Homolysis in a Compact Centrifugal Pump", Artificial Organs, vol. 20, No. 3, pp. 252-257, 1996.
			Rosenfeldt, Franklin L., et al., "A Novel Valveless Rotary Pump for Cardiac Assist", Artificial Organs, vol. 21, No. 5, pp. 420-425, 1997.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through and not considered. Include copy of this of with next communication to applicant.



LIST OF PRIOR ART CITED BY APPLICANT  
(Use several sheets if necessary)

ATTY DOCKET NO.  
9261.16761-DIV

SERIAL NO.  
09/669,104

APPLICANT  
Aboul-Hosn

FILING DATE  
25 September 2000

GROUP  
3762

CUSTOMER NO. 26308

TECHNOLOGY CENTER 3700

AUG 17 2004

RECEIVED

### U.S. PATENT DOCUMENTS

Examiner Initial	DOCUMENT NUMBER	Date	Name	Class	Subclass	Filing Date (if Appropriate)

### FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	Class	Subclass	Translation Yes No
	WO 89/05668	Jun 89	PCT			
	WO 89/07427	Aug 89	PCT			
	WO 90/15640	Dec 90	PCT			
	WO 91/01584	Feb 91	PCT			
	WO 92/02263	Feb 92	PCT			

### OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)


EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this of with next communication to applicant.

<p>LIST OF PRIOR ART CITED BY APPLICANT</p> <p><i>(Use several sheets if necessary)</i></p> <p>CUSTOMER NO. 26308</p>	<p>ATTY DOCKET NO.</p> <p>9261.16761-DIV</p>	<p>SERIAL NO.</p> <p>09/669,104</p>	<p>RECEIVED</p> <p>AUG 17 2004</p> <p>TECHNOLOGY CENTER 3100</p>
	<p>APPLICANT</p> <p>Aboul-Hosn</p>		
	<p>FILING DATE</p> <p>25 September 2000</p>	<p>GROUP</p> <p>3762</p>	

## U.S. PATENT DOCUMENTS

[illegible]

**OTHER PRIOR ART** (*Including Author, Title, Date, Pertinent Pages, Etc.*)

EXAMINER	DATE CONSIDERED
----------	-----------------

LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)	ATTY DOCKET NO. 9261.16761-DIV	SERIAL NO. 09/669,104
	APPLICANT Aboul-Hosn	
	FILING DATE 25 September 2000	GROUP 3762

CUSTOMER NO. 26308

RECEIVED  
AUG 17 2004  
TECHNOLOGY CENTER 3700

O I P E  
AUG 11 2004  
PATENT & TRADEMARK OFFICE

### U.S. PATENT DOCUMENTS

Examiner Initial	DOCUMENT NUMBER	Date	Name	Class	Subclass	Filing Date (if Appropriate)

### FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	Class	Subclass	Translation Yes No
	WO 94/09274	Apr 94	PCT			
	WO 94/09835	May 94	PCT			
	WO 94/13955	Jun 94	PCT			
	WO 95/00185	Jan 95	PCT			
	WO 95/28185	Oct 95	PCT			


### OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)


EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this of with next communication to applicant.

LIST OF PRIOR ART CITED BY APPLICANT <i>(Use several sheets if necessary)</i>	ATTY DOCKET NO. 9261.16761-DIV	SERIAL NO. 09/669,104	RECEIVED AUG 17 2004 TECHNOLOGY CENTER 3700
	APPLICANT Aboul-Hosn		
	FILING DATE 25 September 2000	GROUP 3762	

CUSTOMER NO. 26308



### U.S. PATENT DOCUMENTS

Examiner Initial	DOCUMENT NO.	Date	Name	Class	Subclass	Filing Date (If Appropriate)

### FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	Class	Subclass	Translation Yes No
WO96/18358	08/1996	PCT			
WO97/40751	11/1997	PCT			
5071492	03/1993	JP			
WO99/02204 *	01/1999	PCT			
WO99/65546 *	12/1999	PCT			
WO00/12148 *	03/2000	PCT			
WO00/18448 *	04/2000	PCT			
WO00/19097 *	04/2000	PCT			
WO00/69489 *	11/2000	PCT			

### OTHER PRIOR ART *(Including Author, Title, Date, Pertinent Pages, Etc.)*

			Daily, Bill B., et al. "Pierce-Donarchy Pediatric VAD: Process in Development", Annals of Thoracic Surgery; 61:437-443, 1996.
			Golding, Leonard A.R., et al., "The Cleveland Clinic Rotodynamic Pump Program", Artificial Organs, vol. 20, No. 6, pp. 481-484, 1996.
			Hart, Robert M., et al., "A Magnetically Suspended and Hydrostatically Stabilized Centrifugal Blood Pump", Artificial Organs, vol. 20, No. 6, pp. 591-596, 1996.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this of with next communication to applicant.